

### REMARKS

Claims 4-13 are pending in this application. Claims 4, 6 and 8 have been amended. No new matter has been introduced.

At the outset, Applicants acknowledge with appreciation Examiner Bitar's courtesy in conducting the December 2, 2009 telephone interview with Applicants' representative, Gabriela Coman. During the interview, Examiner Bitar and Applicant's representative discussed Verard ("*Fully automatic identification of AC and PC Landmarks on Brain MRI Using Scene Analysis*") and Sun ("*Anatomic Labeling of PET Brain Images with Automatic Detection of AC and PC*") references and the limitations of claim 4 in view of the two references.

Claims 4-10, 12 and 13 are rejected under 35 U.S.C. §103(a) as being unpatentable over Verard ("*Fully automatic identification of AC and PC Landmarks on Brain MRI Using Scene Analysis*") and Sun ("*Anatomic Labeling of PET Brain Images with Automatic Detection of AC and PC*"). Claim 11 is rejected under 35 U.S.C. §103(a) as being unpatentable over Verard in view of Nowinski (WO 02/43003). These rejections are respectfully traversed.

The subject matter of claims 4-13 would not have been obvious over Verard, or over Verard in view of Sun or Nowinski. Verard and Sun (considered alone or in combination) do not disclose or suggest all limitations of amended independent claim 4.

Verard is silent about "(b) using the estimated position of the AC or PC landmarks to generate a plurality of radiological images relating to different slices, including a first image of a slice including the estimated position of the AC or PC landmark and second images of neighboring slices," much less about "(b) using the estimated position of the AC or PC landmarks to generate a plurality of radiological images relating to different slices, including a first image of a slice including the estimated position of the AC or PC landmark and second images of neighboring slices; and (c) analysing the radiological images slices to improve the estimate of the position of the AC or PC landmarks," as claim 4 recites.

Verard teaches only that the positions of the PC and AC landmarks are found using a step-by-step procedure (wherein the CC, BS and Co are first identified by scene analysis with anatomical atlases data, and then the PC and AC “are easily localized through the successive positioning of windows B1, B2 and B3”) (p. 611, Figs. 2a, 2b). Thus, Verard only teaches steps for localizing the position of PC and AC. Verard is silent, however, about improving the estimated positions of the localized PC and AC, or about using such localization of the PC and AC to generate one or more radiological images relating to various axial or coronal slices, and then analyzing such slice images to improve the estimate of the position of the AC and PC landmarks.

Sun fails to address the deficiencies of Verard. Sun teaches only that “the AC and PC are located in the normalized mid-sagittal slice, using a geometrical relation of the corpus callosum” and that “the final AC and PC are found in the original PET image by retracing the sequences back” (p.57, first col.), and none of the limitations of the claimed invention. Clearly, Sun does not relate in any way to improving the estimated position of the AC or the PC landmark.

Applicants submit that, according to the claimed invention, by generating one or more axial or coronal radiological images from the estimated position of the AC or PC landmark and by analyzing these axial or coronal radiological images to improve the estimated position of the AC or PC landmark, the final positions of the AC or PC landmark can be found using information obtained from all the three orientations. The final estimated position of the AC or PC landmarks is therefore more accurate. Such an advantage cannot be achieved by either Verard or Sun.

Applicants also submit that one skilled in the art would not have been motivated to combine Verard with Sun, to arrive at the claimed invention. Verard relates to a method of identifying AC and PC landmarks from MRI data sets by a specific method (i.e., by using template matching with a successive positioning of windows (or boxes) B1, B2, B3, one box being located within another). In contrast, Sun relates to a method of labeling PET images by automatically detecting AC and PC landmarks. Thus, one skilled in the art would not have been motivated to combine these two disparate methods. In addition, one skilled in the art would not have been motivated to combine the method of Verard (which uses MRI data) with the method of Sun (which


uses PET data), especially since Sun teaches against the use of MRI data (p. 56, col. 1, ll. 14-24; see also discussion on p. 58, col. 2, ll. 30-35 relating to improvement of PET image over MR image of the same data).

For at least the reasons above, Verard, Sun and Nowinski, alone or in combination, fail to disclose or suggest the subject matter of amended independent claim 4 and of dependent claims 5-13, and the Office Action fails to establish a *prima facie* case of obviousness. Withdrawal of the rejection of claims 4-13 is respectfully requested.

Allowance of all pending claims is solicited.

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Respectfully submitted,

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